



## BIOS Update Release Notes

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### PRODUCTS: NUC7i3BNK, NUC7i3BNH, NUC7i5BNK, NUC7i5BNH, NUC7i7BNH

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**BIOS Version 0085 - BNKBL357.86A.0085.2021.0901.1844**

#### About This Release:

- Date: Sep 1, 2021
- ROM Image Checksum: (CRC32) 0x062b4bf9
- ME Firmware: 11.8.86.3909
- EC Firmware: 08.15
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: NA
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23
  
- Supported Flash Devices:
  - WinBond W25Q128JVSIQ 16MB
  
- Microcode Updates included in .ROM & .BIO Files:
  - MC0806E9\_000000E9\_000000EA

#### New Fixes/Features:

- Fixed issues with OFBD module SMI handler vulnerabilities.
- Updated NTFS DXE driver in process of parsing NTFS file system partition.
- Added protection code to prevent unauthorized write at controllable address in SMRAM.

**BIOS Version 0084 - BNKBL357.86A.0084.2021.0623.1038**

#### About This Release:

- Date: June 23, 2021
- ROM Image Checksum: (CRC32) 0x062b4bf9
- ME Firmware: 11.8.86.3909
- EC Firmware: 08.15
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: NA
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

\*Other names and brands may be claimed as the property of others.

- Supported Flash Devices:
  - WinBond W25Q128JVSIQ 16MB
- Microcode Updates included in .ROM & .BIO Files:
  - MC0806E9\_000000E9\_000000EA

**New Fixes/Features:**

- **Updated:** ME FW version to 11.8.86.3909.
- **Updated:** CPU Microcode to 0xEA for IPU 2021.1.

**BIOS Version 0083 - BNKBL357.86A.0083.2020.0714.1344**

**About This Release:**

- Date: July 14, 2020
- ROM Image Checksum: (Checksum) 0x4E66DA9C
- ME Firmware: 11.8.77.3664
- EC Firmware: 08.15
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - Option ROM: Build 1059 PC 14.34
  - UEFI Driver: 9.0.1084
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23
- Supported Flash Devices:
  - WinBond W25Q128JVSIQ 16MB
- Microcode Updates included in .ROM & .BIO Files:
  - MC0806E9\_000000CA.pdb

**New Fixes/Features:**

- Update ME version to 11.8.77.3664
- Updated BIOS code for security fixes.
- Fixed issue with Linux watchdog timer where system did not restart.

**Known Errata:**

- Due to the Intel® ME firmware update in BIOS version 0083, you can't downgrade to version 0082 or earlier.

**BIOS Version 0082 - BNKBL357.86A.0082.2020.0505.1614**

**About This Release:**

- Date: May 05, 2020
- ROM Image Checksum: (Checksum) 0x4E665D75
- ME Firmware: 11.8.70.3626
- EC Firmware: 08.15
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - Option ROM: Build 1059 PC 14.34
  - UEFI Driver: 9.0.1084
- SATA RAID Option ROM: 15.7.0.3054

\*Other names and brands may be claimed as the property of others.

- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23
- Supported Flash Devices:
 

WinBond	W25Q128JVSIQ	16MB
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- Microcode Updates included in .ROM & .BIO Files:
 

MC0806E9_000000CA.pdb
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**New Fixes/Features:**

- Fixed issues with Machine Check Errors / Reboot while running game engine.
- Fixed abnormal behavior in Lock Manufacturing mode.
- Updated BIOS code for security fixes.

<b>BIOS Version 0081 - BNKBL357.86A.0081.2020.0114.1542</b>
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**About This Release:**

- Date: Jan 14, 2020
- ROM Image Checksum: 0x8D9D
- ME Firmware: 11.8.70.3626
- EC Firmware: 08.15
- Memory Reference Code: Based on 3.6.4
- Integrated Graphics:
  - Option ROM: Build 1059 PC 14.34
  - UEFI Driver: 9.0.1084
- SATA RAID Option ROM: 16.8.0.1000
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23
- Supported Flash Devices:
 

WinBond	W25Q64FVSSIQ	64Mb SOP8 (3.3V)
MACRONIX	MX25L6473FM2I-08G	64Mb SOP8 (3.3V)
- Microcode Updates included in .ROM & .BIO Files:
 

MC0806E9_000000B4.mcb
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**New Fixes/Features:**

- Fixed issue where "Hybrid BIOS USB recovery" failed.
- Fixed issue where "Chassis value type changed during flash by .BIO file" for Microsoft request.
- Fixed issue where "SMBIOS Field update BIOS" for Microsoft request.
- Fixed PXE boot issue message not displayed in UEFI.
- Set default Family Name to "BN" for Microsoft request.
- Updated BIOS code for security fixes.
- Updated ME Firmware to 11.8.70.3626.

**Known Errata:**

- Due to the Intel® ME firmware update in BIOS version 0081, you can't downgrade to version 0080 or earlier.

\*Other names and brands may be claimed as the property of others.

**BIOS Version 0080 - BNKBL357.86A.0080.2019.0725.1139**

**About This Release:**

- Date: July 25, 2019
- ROM Image Checksum: 0x5A14
- ME Firmware: 11.8.60.3561
- EC Firmware: 08.15
- Memory Reference Code: Based on 3.6.4
- Integrated Graphics
  - Option ROM: Build 1059 PC 14.34
  - UEFI Driver: 9.0.1084
- SATA RAID Option ROM: 16.8.0.1000
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23
- Supported Flash Devices:
  - WinBond W25Q64FVSSIQ 64Mb SOP8 (3.3V)
  - MACRONIX MX25L6473FM2I-08G64Mb SOP8 (3.3V)
- Microcode Updates included in .ROM File:
  - MC0806E9\_000000B4.mcb
- Additional Microcode Updates included only in .BIO File:
  - MC0806E9\_000000B4.mcb

**New Fixes/Features:**

- Fixed issue where BIOS password isn't recognized.
- Updated BIOS code for security fixes.

**BIOS Version 0079 - BNKBL357.86A.0079.2019.0516.1758**

**About This Release:**

- Date: May 16, 2019
- ROM Image Checksum: 0x477A
- ME Firmware: 11.8.60.3561
- EC Firmware: 08.15
- Memory Reference Code: Based on 3.6.4
- Integrated Graphics
  - Option ROM: Build 1059 PC 14.34
  - UEFI Driver: 9.0.1084
- SATA RAID Option ROM: 16.8.0.1000
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Updated processor microcode.
- Fixed the issue where the BIOS was inaccessible using the USB Type C port.

**BIOS Version 0078 - BNKBL357.86A.0078.2019.0425.1314**

**About This Release:**

- Date: April 25, 2019
- ROM Image Checksum: 0x0B8A

- ME Firmware: 11.8.60.3561
- EC Firmware: 08.15
- Memory Reference Code: Based on 3.6.4
- Integrated Graphics
  - Option ROM: Build 1059 PC 14.34
  - UEFI Driver: 9.0.1084
- SATA RAID Option ROM: 16.8.0.1000
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Added ENERGY Star e-logo support.
- Implemented security fix.

<b>BIOS Version 0076 - BNKBL357.86A.0076.2019.0219.1646</b>
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**About This Release:**

- Date: February 19, 2019
- ME Firmware: 11.8.60.3561
- EC Firmware: 08.15
- Memory Reference Code: Based on 3.6.4
- Integrated Graphics:
  - Option ROM: Build 1059 PC 14.34
  - UEFI Driver: 9.0.1084
- SATA RAID Option ROM: 16.8.0.1000
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Fixed issue where Thunderbolt Software always asks to approve device when Thunderbolt Security in BIOS is set to Legacy Mode.
- Updated BIOS code for security fixes.
- Updated VBIOS to Build 1059 PC 14.34.
- Updated GOP to version 9.0.1084.
- Updated Intel ME firmware to version 11.8.60.3561.
- Updated RST to version 16.8.0.1000.

**Known Errata:**

- Due to the Intel® ME firmware update in BIOS version 0076, you can't downgrade to version 0072 or earlier.

<b>BIOS Version 0072 - BNKBL357.86A.0072.2018.1222.1129</b>
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**About This Release:**

- Date: December 22, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.15
- Memory Reference Code: Based on 3.2.0
- Integrated Graphics:
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054

\*Other names and brands may be claimed as the property of others.

- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Fixed issue where disk encryption on Samsung eDrive doesn't work.
- Fixed issue where BIOS update via F7 fails
- Fixed issue where SGX tool shows "SGX has not yet been enabled per CPUID".

**BIOS Version 0071 - BNKBL357.86A.0071.2018.1102.1400**

**About This Release:**

- Date: November 2, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.15
- Memory Reference Code: Based on 3.2.0
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Modified BIOS code for BIOS update failure while "Flashing FV data image".
- Fixed issue where S.M.A.R.T. function fails when using hard disk to boot.

**BIOS Version 0070 - BNKBL357.86A.0070. 2018.1019.1503**

**About This Release:**

- Date: October 18, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.15
- Memory Reference Code: Based on 3.2.0
- Integrated Graphics
  - o Option ROM: Build 1000 PC 10.46
  - o UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- BIOS code improvements.
- Fixed the issue where you couldn't update the BIOS via the power button menu option F7.
- Fixed the issue where Intel® Integrator Toolkit would not save custom settings.

- Added the option to select 1024 MB in the "IGD Aperture Size" setting and fixed the issue where the computer wouldn't shut down when it was set to 1024 MB.

**BIOS Version 0069 - BNKBL357.86A.0068.2018.0920.1250**

**About This Release:**

- Date: September 20, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.15
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Fixed issue where consumer infrared fails when disabled, then re-enabled in BIOS.
- Fixed issue where system can't enter sleep mode after attaching a USB Type-C device.
- Fixed issue where C-states aren't working correctly when using UEFI boot.

**BIOS Version 0068 - BNKBL357.86A.0068.2018.0824.1125**

**About This Release:**

- Date: August 24, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.15
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Fixed issue where system wakes when it's not supposed to.

**BIOS Version 0067 - BNKBL357.86A.0067.2018.0814.1500**

**About This Release:**

- Date: August 14, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.15
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - Option ROM: Build 1000 PC 10.46

\*Other names and brands may be claimed as the property of others.

- o UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Set Consumer Infrared default to disabled for Windows RS4 support.
- Removed Intel® Ready Mode Technology items in BIOS setup for Intel security fix.

<b>BIOS Version 0066 - BNKBL357.86A.0066.2018.0724.1832</b>
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**About This Release:**

- Date: July 24, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.15
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - o Option ROM: Build 1000 PC 10.46
  - o UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Updated CPU Microcode (Security Advisory-00115)
- Fixed issue where BIOS customization for digital microphone and HDMI CEC doesn't work when using Intel® Integrator Toolkit.
- Removed Ready Mode related code/BIOS items for Intel security fix.

<b>BIOS Version 0065 - BNKBL357.86A.0065.2018.0606.1639</b>
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**About This Release:**

- Date: June 06, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.15
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - o Option ROM: Build 1000 PC 10.46
  - o UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Updated the EC Firmware.
- Fixed CEC not working correctly.

\*Other names and brands may be claimed as the property of others.



**BIOS Version 0064 - BNKBL357.86A.0064.2018.0529.1711**

**About This Release:**

- Date: May 28, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.12
- Integrated Graphics:
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Added security enhancements.
- Fixed issue with "F8 to Activate Windows Recovery Mode" prompt.

**BIOS Version 0063 - BNKBL357.86A.0063.2018.0413.1542**

**About This Release:**

- Date: April 13, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.12
- MEBx Revision: NA
- Integrated Graphics
  - o Option ROM: Build 1000 PC 10.46
  - o UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054
- SATA non-RAID Option ROM: NA
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Added a setup option "Audio DSP" which enables/disables voice control. The default is set to enabled.
- Removed the 1024 MB and larger options in the "IGD Aperture Size" setup item.

**BIOS Version 0062 - BNKBL357.86A.0062.2018.0222.1644**

**About This Release:**

- Date: February 22, 2018
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.12
- Memory Reference Code: Based on 2.8.1
- Integrated Graphics:
  - o Option ROM: Build 1000 PC 10.46
  - o UEFI Driver: 9.0.1066
- SATA RAID Option ROM(Legacy): 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)

- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Updated CPU Microcode (Security Advisory-00088)

**BIOS Version 0060 - BNKBL357.86A.0060.2017.1214.2013**

**About This Release:**

- Date: December 14, 2017
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.12
- Memory Reference Code: Based on 2.8.1
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM(Legacy): 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Security Enhancements.
- Fixed the issue that would cause a yellow bang for "USCI USB Connector Manager" in device manager if the Intel® Optane™ Memory was removed.
- Fixed the "no boot device found" issue when Intel® Optane™ Memory is enabled in the BIOS and a SATA device is being used.
- Updated the EC version to v8.12
- Updated the RC to version 2.8.1.
- Added the BIOS option "PCIe ASPM Support" and the default state is enabled. This is only an option on devices with board AA#:xxxx-304 and greater.
  - You can use the command: Get-WmiObject Win32\_Baseboard Version to get the AA number.

**BIOS Version 0057 - BNKBL357.86A.0057.2017.1122.1550**

**About This Release:**

- Date: November 22, 2017
- ME Firmware: 11.8.50.3425
- EC Firmware: 08.09
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM: 15.7.0.3054
- AHCI Code: Based on AHCI 13
- LAN Option ROM: v0.1.10 PXE-2.1 (build 092)
- Visual BIOS: 2.2.23

**New Fixes/Features:**

- Updated Management Engine Firmware to version: 11.8.50.3425 (Security Advisory-00086).
- Due to a security enhancement, it will not be possible to go to any BIOS earlier than BIOS 0054.

\*Other names and brands may be claimed as the property of others.

- Fixed Intel® Integrator Toolkit (Intel® ITK) issue that would cause a splash screen to not work correctly.

**BIOS Version 0054 - BNKBL357.86A.0054.2017.1025.1822**

**About This Release:**

- Date: October 25, 2017
- ME Firmware: 11.6.27.3264
- EC Firmware: 08.09
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics
- Option ROM: Build 1000 PC 10.46
- UEFI Driver: 9.0.1066
- SATA RAID Option ROM: (Revision) : 15.5.0.2875
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN
- Option ROM: v0.1.10 PXE-2.1 (build 092)
- UEFI Driver: 0.0.15
- Visual Bios: 2.2.23

**New Fixes/Features:**

- Fixed the Smart Sound Technology yellow bang issue.
- Fixed the issue where ITK Custom BIOSs weren't working on BIOS 0051 and 0052.

**BIOS Version 0052 - BNKBL357.86A.0052.2017.0918.1346**

**About This Release:**

- Date: September 18, 2017
- ME Firmware: 11.6.27.3264
- EC Firmware: 08.09
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM: (Revision) : 15.5.0.2875
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN:
  - Option ROM: v0.1.10 PXE-2.1 (build 092)
  - UEFI Driver: 0.0.15
- Visual Bios: 2.2.23

**New Fixes/Features:**

- Updated EC to version 08.09
- Changed the maximum size of BIOS setup item, "IGD Minimum Memory" to 64 MB.
- Changed the maximum size of BIOS setup item, "IGD Aperture Size" to 1024 MB

**BIOS Version 0051 - BNKBL357.86A.0051.2017.0901.1328**

**About This Release:**

- Date: September 01, 2017
- ME Firmware: 11.6.27.3264
- EC Firmware: 8.05
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM: (Revision) : 15.5.0.2875
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN:
  - Option ROM: v0.1.10 PXE-2.1 (build 092)
  - UEFI Driver: 0.0.15
- Visual Bios: 2.2.23

**New Fixes/Features:**

- Added "wake on voice" (WOV) BIOS setting for hands free personal assistant support.
- Fixed an issue where "wake on USB from S5 was failing.
- Updated the help text for "Allow UEFI 3rd party driver loaded".
- Updated processor support.

<b>BIOS Version 0050 - BNKBL357.86A.0050.2017.0816.2002</b>
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**About This Release:**

- Date: August 16, 2017
- ME Firmware: 11.6.27.3264
- EC Firmware: 8.05
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics:
  - o Option ROM: Build 1000 PC 10.46
  - o UEFI Driver: 9.0.1066
- SATA RAID Option ROM: (Revision) : 15.5.0.2875
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN:
  - o Option ROM: v0.1.10 PXE-2.1 (build 092)
  - o UEFI Driver: 0.0.15
- Visual Bios: 2.2.23

**New Fixes/Features:**

- Security enhancements.
- Added the setup option "Allow UEFI Third Party Driver loaded" and set the default state to disabled.
- Due to a security enhancement, it will not be possible to go to any BIOS earlier than BIOS 0050.

<b>BIOS Version 0049 - BNKBL357.86A.0049.2017.0724.1541</b>
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**About This Release:**

- Date: July 24, 2017

- ME Firmware: 11.6.27.3264
- EC Firmware: 8.05
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM: (Revision) : 15.5.0.2875
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN
  - Option ROM: v0.1.10 PXE-2.1 (build 092)
  - UEFI Driver: 0.0.15
- Visual Bios: 2.2.23

**New Fixes/Features:**

- Updated Intel® Rapid Storage Technology (Intel RST®) driver to version 15.7.0.1014

<b>BIOS Version 0048 - BNKBL357.86A.0048.2017.0704.1415</b>
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**About This Release:**

- Date: July 04, 2017
- ME Firmware: 11.6.27.3264
- EC Firmware: (Revision) : 8.05
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1066
- SATA RAID Option ROM: (Revision) : 15.5.0.2875
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN
  - Option ROM: v0.1.10 PXE-2.1 (build 092)
  - UEFI Driver: 0.0.15
- Visual Bios: 2.2.23

**New Fixes/Features:**

- Updated GOP Driver to version 9.0.1066.
- Updated processor support.
- Updated the EC to version 8.5. The fixes include:
  - The fan would not run when Wake from LAN was used.
- Modified the Fast Boot and Intel® Optane™ Memory setup item behavior.
- Moved the placement of the Intel® Optane™ Memory warning from top left corner to the middle of the screen.

<b>BIOS Version 0047 - BNKBL357.86A.0047.2017.0518.1824</b>
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**About This Release:**

- Date: May 18, 2017
- ME Firmware: 11.6.27.3264
- EC Firmware: (Revision) : 8.02
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46

\*Other names and brands may be claimed as the property of others.

- UEFI Driver: 9.0.1056
- SATA RAID Option ROM: (Revision) : 15.5.0.2875
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN
  - Option ROM: v0.1.10 PXE-2.1 (build 092)
  - UEFI Driver: 0.0.15
- Visual Bios: 2.2.23

**New Fixes/Features:**

- Micro Code update to fix Hyper-Threading issue
- Update FW\_VERSION\_GUID for Windows update
- Update EC to v8.2 to fix the LED effect when changing the always on mode to low brightness slow fade mode.
- Update ME to v11.6.27.3264

<b>BIOS Version 0046 - BNKBL357.86A.0046.2017.0503.1744</b>
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**About This Release:**

- Date: May 03, 2017
- ME Firmware: 11.6.20.1221
- EC Firmware: (Revision) : 8.01
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1056
- SATA RAID Option ROM: (Revision) : 15.5.0.2875
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN
  - Option ROM: v0.1.10 PXE-2.1 (build 092)
  - UEFI Driver: 0.0.15
- Visual Bios: 2.2.23

**New Fixes/Features:**

- Updated EC FW to v8.01 to fix LED ring bugs when setting the colors to red, green or white.
- Added EC initialized BIOS recovery capability.
- Added feature "EC Requirement update for LED."
- Thermal management improvement.
- Corrected CEC help strings.
- Fixed issue where 'Install Intel Platform Key' in BIOS was greyed out when Secure Boot was enabled.

<b>BIOS Version 0045 - BNKBL357.86A.0045.2017.0417.1728</b>
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**About This Release:**

- Date: April 17, 2017
- ME Firmware: 11.6.20.1221
- EC Firmware: (Revision) : 7.10
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46

\*Other names and brands may be claimed as the property of others.

- UEFI Driver: 9.0.1056
- SATA RAID Option ROM: (Revision) : 15.5.0.2875
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN
  - Option ROM: v0.1.10 PXE-2.1 (build 092)
  - UEFI Driver: 0.0.15
- Visual Bios: 2.2.23
- 

**New Fixes/Features:**

- Updated EC to version 7.10
- Added a warning message when the SATA mode is changed.
- Fixed an issue where the mouse would lag in BIOS.
- Fixed an issue where the system wouldn't reboot after BIOS update.

<b>BIOS Version 0042 - BNKBL357.86A.0042.2017.0303.1854</b>
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**About This Release:**

- Date: March 03, 2017
- ME Firmware: 11.6.20.1221
- EC Firmware: (Revision) : 7.02
- Memory Reference Code: Based on 1.7.0.0
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1056
- SATA RAID Option ROM: (Revision) : 15.2.0.2740
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN
  - Option ROM: v0.1.10 PXE-2.1 (build 092)
  - UEFI Driver: 0.0.15
- Visual Bios: 2.2.23

**New Fixes/Features:**

- Updated EC to v7.2
- Fixed issue where USB Type-C ACPI Validation would fail.
- Changed maximum fan speed to 85% in Balanced/Quiet mode and to 100% in Cooling/fixed mode.
- Fixed an issue that would cause the system to halt with error 0x96 during a reboot.
- Updated Kaby Lake motherboard label to: 5.12\_VEB\_1ATQ0028.
- Updated RC to v1.7.
- Updated TXE to 11.6.20.1221.
- Updated EC to v6.42.
- Fixed an issue where the PCIe/NVMe m.2 drive would disappear.
- Fixed an issue where memory with an incorrect Trfc parameter in the SPD would cause the screen to flicker.
- Fixed cooling page so that 'Fixed Duty cycle option' in under fix mode.
- Changed, GPIO\_SKL\_LP\_GPP\_B17, to high.
- Added an error message when trying to flash the BIOS to BN0036 and earlier.
- Added support for FAN PWM smoothing change.

\*Other names and brands may be claimed as the property of others.

- Fixed a boot block fault tolerance failure.

**BIOS Version 0036 - BNKBL357.86A.0036.2017.0105.1112**

**NOTE: Due to an ME update, there is no way to downgrade the BIOS after updating to BIOS 0036.**

**About This Release:**

- Date: January 05, 2016
- ME Firmware: 11.6.10.1196
- EC Firmware: (Revision) : 6.11
- Framework Reference Code: Based on 1.3.0.0
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1056
- SATA RAID Option ROM: (Revision) : 15.2.0.2740
- SATA non-RAID Option ROM: (Revision) : 15.2.0.2754
- AHCI Code: Based on (Revision) : AHCI 13
- LAN
  - Option ROM: v0.1.10 PXE-2.1 (build 092)
  - UEFI Driver: 0.0.15
- Visual Bios: 2.2.23

**New Fixes/Features:**

- Updated the CPU microcode
- Updated the embedded controller to version 6.11.
- Fixed a fan issue where the minimum temperature value would restore to default on reboot.
- Fixed an issue where system couldn't enter into the Legacy RAID configuration menu.
- Fixed an issue where items that couldn't be modified via Intel® Integrator Toolkit would be shown.
- Added an error message if trying to flash to BIOS BN0026 or earlier.
- Fixed a real time clock wake up issue.
- Fixed an issue where the microphone array device always kept a high volume.
- Fixed an issue where a CIR remote wouldn't wake up the NUC when in S5.
- Updated a Cooling page setting by adding a fan curve balance mode for the i5 and i7 NUCs.
- Fixed issue where the F7 BIOS menu a M.2 partition would show as an unknown device.
- Fixed an issue where clearing the TPM from the secure jump menu would load the BIOS default setting.
- Fixed a Realtek\* controller (PCIE) SSID issue.
- Fixed an issue where the micro SD card reader lost its SSID after resuming from S3.
- Updated the Graphics Output Protocol (GOP) to version 1056.
- Updated the "Secondary Fan Off Temperature" default setting on the Cooling page.
- Fixed an issue where the SATA controller and onboard LAN controller would cause an IRQ conflict.

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- Fixed an issue where a BIOS text item would be incorrectly displayed.
- Fixed an issue where the system would hang during shutdown when a USB Type-C device was attached.
- Fixed an issue where the F5 hot key for the Windows\* recovery environment didn't work.

**BIOS Version 0031 - BNKBL357.86A.0031.2016.1206.1405**

**About This Release:**

- Date: December 06, 2016
- ME Firmware: 11.6.0.1136
- Framework Reference Code: Based on 1.3.0.0
- Integrated Graphics
  - Option ROM: Build 1000 PC 10.46
  - UEFI Driver: 9.0.1053
- LAN
- Visual Bios: 2.2.23
- EC FW rev : 5.7
- RST driver: 15.2.0.2740

**New Fixes/Features:**

- Initial production BIOS release

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